EXHIBIT 5

Integrum LLC

Data Analytics| Statistics | Actuarial Services

September 24, 2020

Mr. Luis Collazo Rodríguez, Esq.
Executive Director
Administración de los Sistemas de Retiro
Centro Gubernamental Minillas, Torre Norte
San Juan, PR 00940

Dear Mr. Collazo

To present the Act 80 2020 Early Retirement Incentive Program economic impact, Integrum, LLC prepared three memorandums consisting of an actuarial projection of potential savings.

<u>Summary of Results</u>

- Act 447 participants with 20 years or more of credited service – $850 million over a thirty-year period
- Act 1 participants with 15 years or more of credited service
    - Central Government Agencies under Act 122-2017 and Act 29-2009 – $305 million over a forty-year period
    - Corporations and Municipalities – $1,410 million over a fifty-year period

The following table compares and summarize benefits granted under Act 80 2020.

Participants Per Act	Count	Avg. Monthly Salary	Years of Service Required by Act 80	Avg. Pension without Act 80	Final Pension Act 80	Benefit Difference	Avg. Pension ($) without Act 80	New Pension Benefit with Act 80	Monthly Increase ($)	Pension Increase by Act 80 (%)	Health Insurance - Years	Health Insurance Subsidy - $
Act 447	6,934	$3,001	20	39%	50%	11%	$1,178	$1,500	$323	27%	Until 62 Years	$100
Act 1	1,862	$2,938	15	30%	50%	20%	$876	$1,469	$593	68%	Until 62 Years	$100
Act 1 Corp./Mun.	9,112	$3,366	15	28%	50%	22%	$945	$1,683	$738	78%	Until 62 Years	$100
Total	**17,908**											

Please review the attached reports.

Respectfully,

Pedro Negrón Ortiz, MBA

President Integrum LLC

Javier Hernández Muñoz, ASA, MAAA

Vice President Integrum LLC

Integrum LLC

Data Analytics | Statistics | Actuarial Services

September 25, 2020

Mr. Luis Collazo Rodríguez, Esq.
Executive Director
Administración de los Sistemas de Retiro
Centro Gubernamental Minillas, Torre Norte
San Juan, PR 00940

Administración de los Sistemas de Retiro

Revision of Projected Savings of the Early Retirement Incentive Program for Act 447 Members Following the Enactment of Act 80-2020

INTRODUCTION

Integrum, LLC (Integrum) was previously engaged by the Administración de los Sistemas de Retiro (ASR) to provide an actuarial projection of the potential savings over the next 30 years of the early retirement incentive program (ERIP) offered to eligible Act 447 members. The ERIP initiative became part of Senate Bill 1616 and was later enacted into Act 80-2020.

Although Act 80-2020 introduced some minor modifications to the ERIP provisions governing Act 447 members, we will see that the largest change in projected savings is due to the high turnover rates observed since the analysis was originally conducted, and which prompted the ASR management to request an updated projection of savings using more recent data. The purpose of this memorandum is to provide the results of our analysis.

BACKGROUND

Under ERIP, eligible Act 447 members would receive a retirement benefit consisting of the greatest of 50% of final salary or their existing accrued retirement benefit. Moreover, eligible members would also receive a monthly $100 health insurance subsidy, which is to last until perpetuity. ERIP is expected to create savings from a reduction in payroll expenses.

State police officers and employees who enrolled for voluntary preretirement under Act 211 are ineligible to enroll for ERIP. All other Act 447 employees with 20 years of service as of June 30, 2020 are eligible to enroll for ERIP. Despite these restrictions to eligibility, the data at the moment the analysis was originally conducted suggested that over 9,300 Act 447 would be eligible to enroll.

Our previous report indicated that the ERIP initiative would generate savings over a thirty-year period having a present value of $1,010 million, with savings for the first year after implementation being $190 million, and the balance spread over the remaining 29 years. We chose a thirty-year term to present our projections because of the particular cash flow of net savings. This previous report was prepared using census data from August 2019.

For our updated analysis, we used census data from January 2020. An initial survey of the updated data shows just over 6,900 Act 447 employees, a 25% reduction with respect to the previous employee count. As can be expected, the resulting decrease in savings is proportional to the reduction of eligible participants. Moreover, Act 80-2020 introduced two changes to ERIP as set forth by Senate Bill 1616. First, the retirement benefit is set at 50% of the highest salary of the last 3 years (instead of final salary). Second, the monthly health subsidy will now be paid until the employee turns 62.

Throughout the following we will be referencing our memorandum dated from September 3, 2019, and titled **Projected Savings of the Early Retirement Incentive Program for Act 447 Employees**, which contains the actuarial basis for the ERIP initiative as originally presented in Senate Bill 1616.

DATA, METHODOLOGY, AND ASSUMPTIONS

The ASR provided Integrum with the January 2020 census data for Act 447 members, which was similar in form to the data used for our previous analysis, but not in size. As was mentioned above, the January 2020 data set contains approximately 25% records less than the 9,300 records from the August 2019 data set. The data was reviewed for reasonableness and consistency, but it was not audited or otherwise checked for accuracy.

The quantification of savings from the implementation of ERIP follows the same methodology as before. First, we modeled the baseline scenario (a scenario without ERIP). Payroll expenses and retirement benefit payments over the next 30 years were projected for each Act 447 member. For the baseline scenario, retirement was assumed to occur naturally upon attainment of social security normal retirement age. Retirement benefit payments were modeled to include mortality assumptions. Total expense is the sum of payroll expenses and retirement benefit payments, which for the baseline scenario add up to $2,665 million in present value terms.

We next modeled a scenario in which 100% of eligible Act 447 members retire under ERIP. Retirement date is set to be June 30, 2020. Although Act 80-2020 sets ERIP retirement benefit payments at 50% of highest salary of the last 3 years, we used final salary as a proxy in our model due to limited data availability. In this scenario, total expense over the 30-year projection period is $1,810 million. Mortality assumptions are the same as in the baseline. The reduction in payroll expenses under ERIP is partially offset by an increase in retirement benefit payments. Net savings are given by the difference in total expense with respect to the baseline. Table 1 summarizes our projected cash flows.

As can be seen in Table 1, the proposed ERIP initiative is expected to create savings over a thirty-year period having a present value of $850 million. We expect savings to be broken down as follows:

- $150 million in the first year after implementation,
- a further $475 million over the following four years (for a total of $625 million in the initial five years after implementation),

- the remaining $225 million spread over the final 25 years of the projection period.

Table 1. ERIP Projected Savings

(All figures in millions of dollars)

	Base Scenario (no ERIP)			With 100% Participation			
Fiscal Year Ending	Estimated Projected Payroll	Estimated Projected Benefit Payments	Total Expense	Estimated Projected Payroll	Estimated Projected Benefit Payments	Total Expense	Net Savings
6/30/21	274	9	283	0	132	132	151
6/30/22	266	11	277	0	130	130	147
6/30/23	257	13	270	0	128	128	142
6/30/24	245	16	261	0	126	126	135
6/30/25	227	21	248	0	124	124	124
6/30/26	204	28	232	0	122	122	109
6/30/27	193	31	223	0	120	120	103
6/30/28	165	39	204	0	118	118	86
6/30/29	134	49	182	0	116	116	66
6/30/30	102	58	160	0	114	114	46
6/30/31	74	66	140	0	112	112	28
6/30/32	51	72	123	0	110	110	13
6/30/33	31	77	108	0	108	108	1
6/30/34	18	79	97	0	105	105	-8
6/30/35	9	80	89	0	103	103	-14
6/30/36	4	80	83	0	100	100	-17
6/30/37	1	78	79	0	97	97	-18
6/30/38	0	76	76	0	94	94	-18
6/30/39	0	74	74	0	91	91	-18
6/30/40	0	71	71	0	88	88	-17
6/30/41	0	68	68	0	85	85	-16
6/30/42	0	65	65	0	81	81	-16
6/30/43	0	62	62	0	77	77	-15
6/30/44	0	59	59	0	73	73	-14
6/30/45	0	56	56	0	69	69	-13
6/30/46	0	52	52	0	65	65	-12
6/30/47	0	49	49	0	60	60	-12
6/30/48	0	45	45	0	56	56	-11
6/30/49	0	41	41	0	51	51	-10
6/30/50	0	38	38	0	47	47	-9
Present Value of Cash Flows	1,841	823	2,664	0	1,812	1,812	852

For the purpose of this analysis, the existing accrued retirement benefit for each Act 447 member is defined to be the sum of the benefits under the Act 447 defined benefit pension plan and the Act 3 contribution account plan. Fringe benefits consisting mainly of Social Security, Medicare, and health plan contributions are included in payroll expenses. We are assuming that no new employees are hired to replace ERIP retirees.

Because net savings are projected over a 30-year period, the present value of estimated cash flows is used to compare across different scenarios. The present value of cash flows was computed using a discount rate of 4%, which is consistent with the rate used to determine annuity factors.

KEY RISKS

The same risk factors that faced our previous analysis are still present. Of these factors, the most important is the distribution of cash flows over a thirty-year term, which consists of large inflows at the beginning of the projection period (the immediate savings obtained from a reduction in expenses associated to payroll and fringe benefits), followed by a long and thin tail of outflows (associated to the increase in retirement benefit payments, which partially offsets savings).

As such, our savings projections could potentially be impacted if the tail of retirement benefit payments turns out to be longer than expected due to improvements in overall life expectancy. To mitigate this risk and to avoid cash flow issues in the future, we propose setting up a $105 million reserve over the initial thirteen years following ERIP implementation, a period during which cash flows are expected to be positive. We estimate that this $105 million reserve would be necessary to cover projected cash outflows during the final seventeen years of the projection period. Allocating 11% of expected net savings to setting up the reserve over thirteen years should be adequate under current mortality assumptions, but ongoing monitoring of reserve levels is recommended.

For a description of other risk factors, please refer to our previous memorandum. Because of said risk factors as well as others, savings can vary from the estimates presented in this report.

SUMMARY OF RESULTS

Act 80-2020 introduced some modifications to the ERIP provisions governing Act 447 members. These modifications, together with the high employee turnover rates observed in recent months prompted the ASR management to request an updated version of our projection of savings associated to ERIP for Act 447 members.

Our reassessment showed there was a significant reduction in projected savings, corresponding to a 25% drop in employee count from August 2019 to January 2020. As per the most recent data, savings over a thirty-year period are estimated to be $850 million, a decrease from the $1,010 million estimated when using the August 2019 data. To address cash flow concerns brought up in the **Key Risks** section, we recommend allocating a portion of projected savings to set up a $105 million reserve. The purpose of this reserve would be to negate outflows projected to occur in the final years of the 30-year projection period.

We relied upon data supplied by ASR to develop our projection of savings. To the extent that the data provided is inaccurate, the results of this analysis may need to be revised. It is our opinion that the projections presented here are based on generally accepted actuarial practices, and consistent with the American Academy of Actuaries' Actuarial Standards of Practice.

Please let us know if you have questions,

Pedro Negrón Ortiz, MBA	Javier Hernández Muñoz, ASA, MAAA
President Integrum LLC	Vice President Integrum LLC

Integrum LLC

Data Analytics | Statistics | Actuarial Services

September 25, 2020

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Administración de los Sistemas de Retiro

Revision of Projected Savings of the Early Retirement Incentive Program Following the Enactment of Act 80-2020

Analysis for Act 1-1990 Employees of Agencies, Public-private Partnerships, or Similar Entities in Reorganization under Acts 122-2017 and 29-2009

INTRODUCTION

Integrum, LLC (Integrum) was previously engaged by the Administración de los Sistemas de Retiro (ASR) to provide an actuarial projection of the potential savings over 40 years associated to an Early Retirement Incentive Program (ERIP) that would be offered to Act 1-1990 employees of agencies, public-private partnerships, or similar entities under the fiscal reorganization plan. The ERIP initiative became part of Senate Bill 1616 that went to House and Senate for consideration.

Senate Bill 1616 was later enacted into Act 80-2020, albeit not without some modifications to its content. The nature of the modifications introduced to the Bill prompted the ASR to engage Integrum again, this time to assess how the changes affected the projected savings valuation. The results of our assessment are included in this memorandum.

BACKGROUND

Throughout the following we will be referencing our memorandum dated from April 15, 2020 and titled **Projected Savings of the Early Retirement Incentive Program for Act 1-1990 Employees of Agencies in Reorganization under Acts 122-2017 and 29-2009**, which contains the actuarial basis for the ERIP

initiative as originally presented in Senate Bill 1616. The provisions of the Bill relevant to the determination of our main actuarial assumptions are the following:

- Eligible participants are employees of agencies, public-private partnerships or similar legal entities in reorganization under Acts 122-2017 and 29-2009.
- Eligible participants are employees with 20 years of service or more.
- Under ERIP, eligible Act 1-1990 members would receive a retirement benefit depending on their employment start date.
    - For employees hired on or before June 30, 1993, the retirement benefit would consist of 40% of final salary
    - For employees hired after June 30, 1993, the benefit would consist of 1.5% of salary as of June 30, 2017 times the number of years of employment through June 30, 2017.
- Additionally, agencies, public-private partnerships or similar entities will provide eligible employees with a monthly $100 health insurance subsidy, which is to last for a year.

Over 1,950 Act 1-1900 employees were expected enroll in ERIP, which would generate $305 million in savings over a 40-year period (in present value terms).

Act 80-2020 introduced changes to Senate Bill 1616, which are presented side-by-side below:

Provision	Senate Bill 1616	Act 80-2020
Eligibility requirement	Agencies in reorganization	No change
Years of employment	20 years or more	15 years or more
Pension benefit	•Employees hired on or before June 30, 1993: 40% of final salary •Employees hired after June 30, 1993: 1.5% of salary times number of years of employment at June 30, 2017	All employees receive 50% of highest salary in last 3 years
Health benefit	$100 per month for one year	$100 per month until age 62

DATA, METHODOLOGY, AND ASSUMPTIONS

We used the same January 2020 census data for Act 1-1990 members that were provided by the ASR for our initial analysis. Our choice to not update the data responds to our desire to isolate the impact of the changes introduced by Act 80-2020. The data were reviewed for reasonableness and consistency, but were not audited or otherwise checked for accuracy. We expect the following agencies, public-private partnerships, or similar entities to meet the requirements for participation in ERIP:

- Administración de Terrenos
- Junta Reglamentadora de Telecomunicación
- Departamento Desarrollo Económico y Comercio
- Departamento de Recursos Naturales
- Cuerpo de Bomberos de Puerto Rico
- Departamento de Seguridad Pública
- Junta de Gobierno del Servicio 9-1-1
- Compañía para el Comercio y la Exportación
- Administración de Sistemas de Retiro
- Compañía de Fomento Industrial
- Compañía de Turismo
- Junta de Planificación
- Junta de Calidad Ambiental
- Cuerpo de Emergencias Médicas
- Autoridad de Transporte Marítimo
- Autoridad de Puertos
- Comisión del Servicio Público

The quantification of savings from the implementation of ERIP follows the same methodology as before. First, we modeled the baseline scenario (a scenario without ERIP). Payroll expenses and retirement benefit payments over the next 40 years were projected for each Act 1-1990 employee. For the baseline scenario, retirement was assumed to occur naturally upon attainment of social security normal retirement age. Retirement benefit payments were modeled to include mortality assumptions. Total expense is the sum of payroll expenses and retirement benefit payments, which represents $868 million in present value terms for our baseline scenario.

Table 1. ERIP Projected Savings

(All figures in millions of dollars)

	Base Scenario (no ERIP)			With 100% Participation			
Fiscal Year Ending	Estimated Projected Payroll	Estimated Projected Benefit Payments	Total Expense	Estimated Projected Payroll	Estimated Projected Benefit Payments	Total Expense	Net Savings
6/30/21	80	1	80	0	36	36	44
6/30/22	78	1	79	0	36	36	43
6/30/23	76	1	77	0	36	36	41
6/30/24	74	2	75	0	36	36	40
6/30/25	71	2	73	0	35	35	38
6/30/26	69	2	71	0	35	35	36
6/30/27	67	3	69	0	35	35	35
6/30/28	64	3	67	0	34	34	33
6/30/29	60	4	64	0	34	34	30
6/30/30	56	4	60	0	33	33	27
6/30/31	51	5	56	0	33	33	24
6/30/32	46	6	52	0	32	32	20
6/30/33	41	7	48	0	32	32	17
6/30/34	35	9	43	0	31	31	12
6/30/35	29	10	39	0	30	30	8
6/30/36	24	11	35	0	30	30	5
6/30/37	19	12	31	0	29	29	2
6/30/38	14	13	27	0	28	28	-1
6/30/39	11	13	24	0	28	28	-4
6/30/40	7	14	21	0	27	27	-6
6/30/41	4	14	18	0	26	26	-8
6/30/42	2	14	16	0	25	25	-9
6/30/43	1	14	15	0	25	25	-9
6/30/44	0	14	14	0	24	24	-9
6/30/45	0	13	13	0	23	23	-9
6/30/46	0	13	13	0	22	22	-9
6/30/47	0	12	12	0	21	21	-9
6/30/48	0	12	12	0	20	20	-8
6/30/49	0	11	11	0	19	19	-8
6/30/50	0	10	10	0	18	18	-7
6/30/51	0	10	10	0	17	17	-7
6/30/52	0	9	9	0	15	15	-6
6/30/53	0	8	8	0	14	14	-6
6/30/54	0	8	8	0	13	13	-6
6/30/55	0	7	7	0	12	12	-5
6/30/56	0	6	6	0	11	11	-5
6/30/57	0	6	6	0	10	10	-4
6/30/58	0	5	5	0	9	9	-4
6/30/59	0	4	4	0	8	8	-3
6/30/60	0	4	4	0	7	7	-3
Present Value of Cash Flows	734	134	868	0	563	563	305

We next modeled a scenario in which 100% of eligible Act 1-1990 members retire under ERIP. Retirement date is set to be June 30, 2020[1]. Although Act 80-2020 sets ERIP retirement benefit payments at 50% of highest salary of the last 3 years, we used final salary as a proxy in our model due to limited data availability. In this scenario, total expense over the 40-year projection period is $563

[1] Act 80-2020 sets retirement date to December 31, 2020. We did not make this change in the model for the same reason we did not update census data: to avoid introducing noise.

million. Mortality assumptions are the same as in the baseline. The reduction in payroll expenses under ERIP is partially offset by an increase in retirement benefit payments. Net savings are given by the difference in total expense with respect to the baseline. Table 1 summarizes our projected cash flows.

As can be seen in Table 1, the proposed ERIP initiative is expected to create savings over a forty-year period having a present value of $305 million. We expect savings to be broken down as follows:

- $45 million in the first year after implementation,
- a further $140 million over the following four years (for a total of $185 million in the initial five years after implementation),
- the remaining $120 million spread over the final 35 years of the projection period.

We chose a forty-year term to present our projections because of the particular cash flow of net savings.

For the purpose of this analysis, the existing accrued retirement benefit for each Act 1-1990 member is defined to be the sum of the benefits under the Act 1-1990 defined benefit pension plan and the Act 3-2013 contribution account plan. Fringe benefits consisting mainly of Social Security, Medicare, and health plan contributions are included in payroll expenses. We are assuming that no new employees are hired to replace ERIP retirees.

Because net savings are projected over a 40-year period, the present value of estimated cash flows is used to compare across different scenarios. The present value of cash flows was computed using a discount rate of 4%, which is consistent with the rate used to determine annuity factors.

KEY RISKS

The same risk factors that faced our previous analysis are still present. Of these factors, the most important is the distribution of cash flows over a forty-year term, which consists of large inflows at the beginning of the projection period (the immediate savings obtained from a reduction in expenses associated to payroll and fringe benefits), followed by a long but thin tail of outflows (associated to the increase in retirement benefit payments, which partially offsets savings). Because Act 80-2020 introduces larger pension payouts to participants of ERIP, the tail of outflows during the later years of the projection has become larger in both size and variability.

As such, our savings projections could potentially be impacted if the tail of retirement benefit payments turns out to be longer than expected due to improvements in overall life expectancy. To mitigate this risk and to avoid cash flow issues in the future, we propose setting up a $50 million reserve over the initial seventeen years following ERIP implementation, a period during which cash flows are expected to be positive. We estimate that this $50 million reserve would be necessary to cover projected cash outflows during the final twenty-three years of the projection period. Allocating 14% of expected net savings to setting up the reserve over seventeen years should be adequate under current mortality assumptions, but ongoing monitoring of reserve levels is recommended.

For a description of other risk factors, please refer to our previous memorandum.

SUMMARY OF RESULTS

The modifications introduced by Act 80-2020 to the ERIP initiative produce a $180 million decrease in savings when compared to the original provisions as stated in Senate Bill 1616. The ERIP initiative as per Act 80-2020 is expected to create savings for government agencies, public-private partnerships, or similar entities under reorganization under Acts 122-2017 and 29-2009 having a present value of $305 million. In contrast, the savings under the provisions of Senate Bill 1616 were expected to be $485 million. A breakdown of the decrease in savings is given below (all figures in millions):

Net savings under Senate Bill 1616	486
Change in health benefit duration	-12
Change in benefit for employees hired after June 30, 1993	-70
Change in benefit for employees on or before June 30, 1993	-99
Change in years of employment requirement	0
Net savings under Act 80-2020	305

Our projection of savings covers a forty-year timeframe. Expected savings for the first year after implementation are $45 million; this amount increases to $185 million for the initial five years of the program. To address cash flow concerns brought up in the **Key Risks** section, we recommend allocating a portion of projected savings to set up a $50 million reserve. The purpose of this reserve would be to negate outflows projected to occur in the final years of the 40-year projection period.

We relied upon data supplied by ASR to develop our projection of savings. To the extent that the data provided is inaccurate, the results of this analysis may need to be revised.

This memorandum was prepared solely for the internal use of the Administración de los Sistemas de Retiro. Any other use of this memorandum is inappropriate.

It is our opinion that the projections presented here are based on generally accepted actuarial practices, and consistent with the American Academy of Actuaries' Actuarial Standards of Practice.

Please let us know if you have questions,

Pedro Negrón Ortiz, MBA

President Integrum LLC

Javier Hernández Muñoz, ASA, MAAA

Vice President Integrum LLC

Integrum LLC

Data Analytics| Statistics | Actuarial Services

September 25, 2020

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Executive Director
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Centro Gubernamental Minillas, Torre Norte
San Juan, PR 00940

Administración de los Sistemas de Retiro

Projected Savings of the Early Retirement Incentive Program for Act 1-1990 Employees of Corporations and Municipalities

INTRODUCTION

Integrum, LLC (Integrum) was engaged by the Administración de los Sistemas de Retiro (ASR) to provide an actuarial projection of the potential savings over the next 50 years of the early retirement incentive program (ERIP) offered to eligible Act 1-1990 employees as stipulated by Act 80-2020.

Under ERIP, eligible Act 1-1990 employees would receive an improved retirement benefit consisting of 50% of the highest salary in the last 3 years. Additionally, the program participants would receive a monthly health insurance subsidy, which is to last until age 62.

Eligible participants are employees from corporations and municipalities with 15 years of service or more as of June 30, 2017. Act 1-1990 employees of agencies in reorganization under Acts 122-2017 and 29-2009 are not included for the purpose of this analysis. ERIP is expected to create savings from a reduction in payroll expenses. Over 9,400 Act 1-1990 employees are expected to meet the requirements for participation in ERIP.

ERIP is expected to create savings over a fifty-year period having a present value of $1,410 million. Expected savings for the first year after implementation alone are $235 million, and $950 million for the initial five years after implementation.

DATA, METHODOLOGY, AND ASSUMPTIONS

The ASR provided Integrum with the January 2020 census data for Act 1-1990 members, which includes information such as:

- Current salary, current age, hiring date, employer
- Accrued retirement benefit under Act 1-1990, which consists of a defined benefit based on salary and service years as of June 30, 2013.
- Accrued retirement benefit under Act 3-2013, which consists of a monthly annuity based on member contributions and credited interest from July 1, 2013 to June 30, 2017.

The data was reviewed for reasonableness and consistency, but it was not audited or otherwise checked for accuracy.

To quantify savings from the implementation of ERIP, we first modeled the baseline scenario (a scenario without ERIP). Payroll expenses and retirement benefit payments over the next 50 years were projected for each Act 1-1990 employee of a corporation or municipality who additionally had 15 years of service or more as of June 30, 2017. For the baseline scenario, retirement was assumed to occur naturally upon attainment of social security normal retirement age. Retirement benefit payments were modeled to include mortality assumptions. Total expense is the sum of payroll expenses and retirement benefit payments, which in the baseline scenario adds up to $4,480 million in present value terms.

We next modeled a scenario in which 100% of eligible Act 1-1990 members retire under ERIP. Retirement date is set to be June 30, 2020. Although Act 80-2020 sets ERIP retirement benefit payments at 50% of highest salary of the last 3 years, we used final salary as a proxy in our model due to limited data availability. In this scenario, total expense over the 50-year projection period is approximately $3,070 million. Mortality assumptions are the same as in the baseline. The reduction in payroll expenses under ERIP is partially offset by an increase in retirement benefit payments. Net savings are given by the difference in total expense with respect to the baseline. Table 1 summarizes our projected cash flows.

As can be seen in Table 1, the proposed ERIP initiative is expected to create savings over a fifty-year period having a present value of $1,410 million. We expect savings to be broken down as follows:

- $235 million in the first year after implementation,
- a further $715 million over the following four years (for a total of $950 million in the initial five years after implementation),
- and the remaining $460 million spread over the final 45 years of the projection period.

We chose a fifty-year term to present our projections because of the particular cash flow of net savings.

For the purpose of this analysis, the existing accrued retirement benefit for each Act 1-1990 member is defined to be the sum of the benefits under the Act 1-1990 defined benefit pension plan and the Act 3-2013 contribution account plan. Fringe benefits consisting mainly of Social Security, Medicare, and health plan contributions are included in payroll expenses. We are assuming that no new employees are hired to replace ERIP retirees.

Table 1. ERIP Projected Savings
(All figures in millions of dollars)

Fiscal Year Ending	Base Scenario (no ERIP)			With 100% Participation			Net Savings
	Estimated Projected Payroll	Estimated Projected Benefit Payments	Total Expense	Estimated Projected Payroll	Estimated Projected Benefit Payments	Total Expense	
6/30/21	430	5	434	0	200	200	235
6/30/22	415	7	422	0	198	198	224
6/30/23	398	10	408	0	197	197	211
6/30/24	383	12	395	0	195	195	200
6/30/25	366	15	381	0	193	193	188
6/30/26	348	18	366	0	191	191	175
6/30/27	339	19	357	0	189	189	169
6/30/28	321	21	342	0	186	186	156
6/30/29	301	24	326	0	184	184	142
6/30/30	278	28	306	0	181	181	125
6/30/31	250	33	283	0	178	178	105
6/30/32	225	37	262	0	175	175	88
6/30/33	197	42	239	0	171	171	68
6/30/34	168	47	216	0	168	168	48
6/30/35	142	52	194	0	164	164	30
6/30/36	115	57	172	0	161	161	11
6/30/37	91	61	152	0	157	157	-5
6/30/38	71	64	135	0	153	153	-18
6/30/39	53	66	119	0	149	149	-29
6/30/40	38	68	106	0	145	145	-39
6/30/41	25	69	94	0	140	140	-46
6/30/42	15	69	84	0	136	136	-52
6/30/43	8	68	77	0	131	131	-54
6/30/44	4	67	71	0	126	126	-55
6/30/45	2	65	66	0	120	120	-54
6/30/46	1	62	63	0	115	115	-53
6/30/47	0	59	59	0	109	109	-50
6/30/48	0	56	56	0	104	104	-48
6/30/49	0	53	53	0	98	98	-45
6/30/50	0	49	49	0	92	92	-42
6/30/51	0	46	46	0	86	86	-40
6/30/52	0	43	43	0	79	79	-37
6/30/53	0	39	39	0	73	73	-34
6/30/54	0	36	36	0	67	67	-31
6/30/55	0	33	33	0	61	61	-29
6/30/56	0	29	29	0	55	55	-26
6/30/57	0	26	26	0	50	50	-23
6/30/58	0	23	23	0	44	44	-21
6/30/59	0	21	21	0	39	39	-18
6/30/60	0	18	18	0	34	34	-16
6/30/61	0	15	15	0	29	29	-14
6/30/62	0	15	15	0	29	29	-14
6/30/63	0	11	11	0	21	21	-10
6/30/64	0	9	9	0	18	18	-9
6/30/65	0	8	8	0	15	15	-7
6/30/66	0	6	6	0	12	12	-6
6/30/67	0	5	5	0	10	10	-5
6/30/68	0	4	4	0	8	8	-4
6/30/69	0	3	3	0	6	6	-3
6/30/70	0	2	2	0	5	5	-2
Present Value of Cash Flows	3,752	730	4,482	0	3,070	3,070	1,412

Because net savings are projected over a 50-year period, the present value of estimated cash flows is used to compare across different scenarios. The present value of cash flows was computed using a discount rate of 4%, which is consistent with the rate used to determine annuity factors.

KEY RISKS

There are a number of risk factors that could impact our financial projections for the proposed resolution. Some of these risk factors are listed below:

Cash Flow Distribution: We chose a fifty-year term to present our projections because of the particular cash flow of net savings. The cash flow distribution initially consists of large inflows (the immediate savings obtained from a reduction in expenses associated to payroll and fringe benefits), followed by a long tail of outflows in the later years of the projection (associated to the increase in retirement benefit payments, which partially offsets savings).

Our savings projections could potentially be impacted if the tail of retirement benefit payments turns out to be longer than expected due to improvements in overall life expectancy. To mitigate this risk and to avoid cash flow issues in the future, we propose setting up a $315 million reserve over the initial sixteen years following ERIP implementation, a period during which cash flows are expected to be positive. We estimate that this $315 million reserve would be necessary to cover projected cash outflows during the final thirty-four years of the projection period. Allocating 18.1% of expected net savings to setting up the reserve over sixteen years should be adequate under current mortality assumptions, but ongoing monitoring of reserve levels is recommended.

Legislation: Our financial projections were developed in accordance to current law on pension benefits. New legislation regarding public employees could potentially impact our projections.

Valuation Date: Our financial estimates were developed using census data from January 2020. Any significant employee turnover from the preparation of this communication to the moment ERIP is implemented can and will affect or projections.

Participation Level: Participation rate has a large impact on the financial bottom line, and a sufficiently low participation rate can even result in incurred costs instead of savings. A provision to ERIP requiring a minimum participation rate could mitigate this risk and manage savings expectations.

Because of the above risk factors as well as others, savings can vary from the estimates presented in this report.

SUMMARY OF RESULTS

As part of an initiative to generate savings by reducing government's payroll expenses, we studied the viability of the early retirement incentive program for Act 1-1990 employees of corporations and municipalities as stipulated by Act 80-2020. The proposed initiative is expected to create savings over a fifty-year period having a present value of $1,410 million. Expected savings for the first year after implementation alone are $235 million; this amount increases to $950 million for the initial five years. To address cash flow concerns brought up in the **Key Risks** section, we recommend allocating a portion of projected savings to set up a $315 million reserve. The purpose of this reserve would be to negate outflows projected to occur in the final years of the 50-year projection period.

We relied upon data supplied by ASR to develop our projection of savings. To the extent that the data provided is inaccurate, the results of this analysis may need to be revised.

This memorandum was prepared solely for the internal use of the Administración de los Sistemas de Retiro. Any other use of this memorandum is inappropriate.

It is our opinion that the projections presented here are based on generally accepted actuarial practices, and consistent with the American Academy of Actuaries' Actuarial Standards of Practice.

Please let us know if you have questions,

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